

Leak Detection Technology Overview



DESC
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- 40 CFR 280 Monthly Monitoring 0.2 gph
- Data archived at least 1 year or as determined by implementing agency
- Maintenance or calibration records 5 years
- California
- Written records at least 3 years
- Repairs, upgrades, lining documentation for the life of the tank

- Veeder Root, TLS 350 and TLS 350R
- Prime Measurement Systems
- Ronan X76T
- L&J 8100
- MTS
- Hansa Consult
- Vista Research





Mass based

- Uses nitrogen bubbler to calculate mass of fuel
- Not affected by temperature
- up to 3,000,000 gallons, leak rate dependent upon surface area
- Barton, Vista Research, USD

Magnetostrictive

- Calculates leak rate based on net volume change in tank
- Affected by temperature changes
- Up to 75,000 gallons certified to 0.2 gallons per hour
- MTS, Veeder Root, Ronan, L&J, Pneumercator, Incon

Chemical Marker

- A chemical marker (a volatile material not found in fuel is added)
- A series of sampling wells are installed around the tank of interest.
- Samples are taken regularly and analyzed for the presence of the marker.
- Detection of significant amounts of the marker is taken to indicate a leak.



Chemical Marker Detection

A chemical marker (a volatile material not found in the fuel) is added to the fuel stream.

Dual Pressure Volumetric

Based on monitoring the volume of fuel into (or out of) a pipe that is required to maintain a constant pressure.

Dual Pressure Decay

Based on the behavior of leaks under pressure - monitors two or more pressure points for decay, to compensate for temperature changes in the fuel.

Mass Balance Methods

Measure the volume of fuel input compared to fuel output. Temperature compensation is needed for accurate results and very accurate meters are required to achieve a leak detection of less than one percent.



- Leak Detection required on all regulated tanks and piping
- All systems should be integrated into DESC management systems for continuous monitoring
- Systems should be certified by both National Work Group and state and local agencies as required